



Office of Research and Development
National Health and Environmental Effects Research Laboratory
Mid-Continent Ecology Division (MED)

DAVID R. MOUNT

U.S. Environmental Protection Agency
National Health and Environmental Effects Research Laboratory
Mid-Continent Ecology Division - Duluth
6201 Congdon Boulevard
Duluth, Minnesota 55804
218-529-5169
mount.dave@epa.gov

(revised 05/30/01)

EDUCATION

<u>Degree</u>	<u>Year</u>	<u>Major</u>	<u>Institution</u>
Ph.D.	1987	Zoology and Physiology (emphasis in Aquatic Toxicology)	University of Wyoming, Laramie, WY
B.A.	1983	Biology (Statistics concentration)	St. Olaf College, Northfield, MN

EXPERIENCE

Research Aquatic Biologist

<u>Dates</u>	<u>Employer</u>
4/95 - Present	U.S. Environmental Protection Agency Mid-Continent Ecology Division Duluth, Minnesota

Brief Description of Position: Serves as research team leader for the Ecotoxicity Characterization Team within the Ecological Toxicology Branch. Designs, conducts, and published research in environmental toxicology with special emphasis on the toxicology, bioavailability, and bioaccumulation of sediment-associated contaminants.

Deputy Chief, Biology Division

<u>Dates</u>	<u>Employer</u>
12/93 - 4/95	National Fisheries Contaminant Research Center National Biological Survey Columbia, Missouri

Brief Description of Position: Assisted the Chief Biologist in managing and coordinating the research within the Biology Division, representing roughly 25 scientists. Designed and conducted research on sediment toxicology and photo-activation of organic toxicants.

Site Manager

Dates

10/93 - 12/93

Employer

Integrated Laboratory Systems
Duluth, Minnesota

Brief Description of Position: Managed a technical support contract at the U.S. EPA Mid-Continent Ecology Division in Duluth, MN. Responsible for technical, administrative, and financial execution of the contract.

Manager, Environmental Toxicology Department

Dates

10/89 - 10/93

Employer

ENSR Consulting and Engineering
Fort Collins, Colorado

Brief Description of Position: Responsible for the technical, administrative, and financial performance of the Environmental Toxicology Department, a group of approximately 25 scientists in ENSR's Fort Collins, CO office. In addition to managerial duties, conducted technical work in the area of environmental toxicology for a variety of clients.

Senior Aquatic Toxicologist

Dates

8/88 - 10/89

Employer

ENSR Consulting and Engineering
Fort Collins, Colorado

Brief Description of Position: Responsible for the design and completion of research for clients with issues pertaining to environmental toxicology. Prepared proposals, managed projects, conducted research, and prepared reports for a variety of clients.

Post-Graduate Research Associate

Dates

1/88 - 8/88

Employer

Fish Physiology and Toxicology Laboratory
University of Wyoming
Laramie, Wyoming

Brief Description of Position: Provided day-to-day coordination of research activities for a group of approximately 10 scientists during the absence of the laboratory's principal investigator. Designed, conducted, and published research pertaining to environmental toxicology, with particular emphasis on the effects of surface water acidification on fish.

PROFESSIONAL SOCIETIES

Society of Environmental Toxicology and Chemistry
Midwest Regional Chapter of the Society of Environmental Toxicology and Chemistry

PROFESSIONAL ACTIVITIES/APPOINTMENTS

Service

Editorial Board, Environmental Toxicology and Chemistry, 1994 - Present
Session Co-Chair, "Physiological and Biochemical Indicators of Stress in Organisms," Society of Environmental Toxicology and Chemistry, 7th Annual Meeting, Washington, DC, November 2-5, 1986
Vice President, Rocky Mountain Regional Chapter of the Society of Environmental Toxicology and Chemistry, 1989 - 1990
President, Rocky Mountain Regional Chapter of the Society of Environmental Toxicology and Chemistry, 1990 - 1991
Participant, Student Careers Workshops, Society of Environmental Toxicology and Chemistry Annual Meetings, 1992, 1993, 1994
Session Chair, "Aquatic Toxicology -- Metals," Society of Environmental Toxicology and Chemistry, 14th Annual Meeting, Houston, Texas, November 14-18, 1993
Program Committee, Platform Sessions, Society of Environmental Toxicology and Chemistry, 15 Annual Meeting, Denver, Colorado, October 30-November 3, 1994

AWARDS AND HONORS

Service Award, National Biological Service, 1994
ENSR Outstanding Performance Award, 1989
Sigma Xi, 1987
Departmental Distinction (Biology), 1983
Phi Beta Kappa, 1983
Waterworks Association Scholarship Recipient, 1982
Whiteside Scholarship Recipient, 1979 - 1983
Tweed Foundation Scholar, 1979
National Merit Scholar, 1979

PUBLICATIONS

Peer-Reviewed Journals

West, C.W., P.A. Kosian, D.R. Mount, E.A. Makynen, M.S. Pasha, P.K. Sibley, and G.T. Ankley. 2001. Amendment of sediments with a carbonaceous resin reduces bioavailability of polycyclic aromatic hydrocarbons. *Environ. Toxicol. Chem.* 20:1104-1111.

Diamond, S.A., D.R. Mount, L.P. Burkhard, G.T. Ankley, E.A. Makynen, and E.N. Leonard. 2000. Effect of irradiance spectra on the photoinduced toxicity of three polycyclic aromatic hydrocarbons. *Environ. Toxicol. Chem.* 19:1389-1396.

Mount, D.R. and J. R. Hockett. 2000. Use of toxicity identification evaluation methods to characterize, identify, and confirm hexavalent chromium toxicity in an industrial effluent. *Water Res.* 34:1379-1385.

Mount, D.R., L.P. Burkhard, and T.D. Dawson. 1999. Implications of gut purging for tissue residues determined in bioaccumulation testing of sediment with *Lumbriculus variegatus*. *Environ. Toxicol. Chem.*

Mount, D.R. and J.R. Hockett. 1998. Use of toxicity identification evaluation methods to characterize, identify, and confirm hexavalent chromium toxicity in an industrial affluent. *Environment and Chemistry*

Kosian P.A., C.W. West, M. Pasha, J.S. Cox, D.R. Mount, R.J. Huggett, and G.T. Ankley. 1997. Use of a nonpolar resin for the reduction of fluoranthene bioavailability in sediment. *Environ. Toxicol. Chem.*

Canfield, T.J., F.J. Dwyer, J.F. Fairchild, P.S. Haverland, C.G. Ingersoll, N.E. Kemble, D.R. Mount, T.W. LaPoint, G.A. Burton, and M.C. Swift. 1996. Assessing contamination in Great Lakes sediments using benthic communities and the sediment quality triad approach. *J. Great Lakes Res.* (in press).

Ingersoll, C.G., P.S. Haverland, E.L. Brunson, T.J. Canfield, F.J. Dwyer, C.E. Henke, N.E. Kemble, D.R. Mount, and R.G. Fox. 1996. Calculation and evaluation of sediment effect concentrations for the amphipod *Hyaella azteca* and the midge *Chironomus riparius*. *J. Great Lakes Res.* (in press).

Mount, D.R., D.D. Gulley, J.R. Hockett, T.D. Garrison, J.M. Evans. 1997. Statistical models to predict the toxicity of major ions to *Ceriodaphnia dubia*, *Daphnia magna*, and fathead minnows (*Pimephales promelas*). *Environ. Toxicol. Chem.* 16(10):2009-2019.

Ankley, G.T., W.J. Berry, D.M. Di Toro, D.J. Hansen, R.A. Hoke, D.R. Mount, M.C. Reiley, R.C. Swartz, and C.S. Zarba. 1996. Letter to the editor: Use of equilibrium partitioning to establish sediment quality criteria for nonionic chemicals: A reply to Iannuzzi et al. *Environ. Toxicol. Chem.* 15:2056-2066.

Ankley, G.T., O.G. Mekenyan, P.A. Kosian, D.R. Mount, and E.A. Makynen. 1996. Identification of phototoxic polycyclic aromatic hydrocarbons in sediments through a sample fractionation and QSAR analysis. *SAR QSAR Environ. Res.* 5:177-183.

Ankley, G.T. and D.R. Mount. 1996. Retrospective analysis of the ecological risk of contaminant mixtures in aquatic sediments. *Human and Environmental Risk Assessment* 2:434-440.

Hockett, J.R. and D.R. Mount. 1996. Use of metal chelating agents to differentiate among sources of acute aquatic toxicity. *Environ. Toxicol. Chem.* 15(10):1687-1693.

Mount, D.R., A.K. Barth, T.D. Garrison, K.A. Barten, and J.R. Hockett. 1994. Dietary and waterborne exposure of rainbow trout (*Oncorhynchus mykiss*) to copper, cadmium, lead, and zinc using a live diet. *Environ. Toxicol. Chem.* 13:2031-2041.

Mount, D.R. and D.I. Mount. 1992. A simple method of pH control for static and static-renewal aquatic toxicity tests. *Environ. Toxicol. Chem.* 11:609-614.

McDonald, D.G., C.M. Wood, R.G. Rhem, M.E. Mueller, D.R. Mount, and H.L. Bergman. 1991. Nature and time course of acclimation to aluminum in juvenile brook trout (*Salvelinus fontinalis*) I. Physiology. *Can. J. Fish. Aquat. Sci.* 48:2006-2015.

Ingersoll, C.G., D.D. Gulley, D.R. Mount, J.R. Hockett, M.E. Mueller, and H.L. Bergman. 1990. A comparison of the response of two brook trout (*Salvelinus fontinalis*) strains exposed to pH, aluminum, and calcium. *Can. J. Fish. Aquat. Sci.* 47:1641-1648.

Ingersoll, C.G., D.R. Mount, D.D. Gulley, T.W. LaPoint, and H.L. Bergman. 1990. The effects of pH, aluminum, and calcium on survival and growth of brook trout (*Salvelinus fontinalis*) early life stages. *Can. J. Fish. Aquat. Sci.* 47:1580-1592.

Mount, D.R., M.J. Swanson, J.E. Breck, A.M. Farag, and H.L. Bergman. 1990. Responses of brook trout (*Salvelinus fontinalis*) fry to fluctuating acid, aluminum, and low calcium exposure. *Can. J. Fish. Aquat. Sci.* 47:1623-1630.

Wood, C.M., D.G. McDonald, C.G. Ingersoll, D.R. Mount, D.E. Johannsson, S. Landsberger, and H.L. Bergman. 1990. Whole body ions of brook trout alevins: Responses of yolk-sac and swim-up stages to water acidity, calcium, and aluminum, and recovery effects. *Can. J. Fish. Aquat. Sci.* 47:1604-1615.

Wood, C.M., D.G. McDonald, C.G. Ingersoll, D.R. Mount, D.E. Johannsson, S. Landsberger, and H.L. Bergman. 1990. The interactive effects of water acidity, calcium and aluminum on whole body ions of brook trout continuously

exposed from fertilization to swim-up: A study by instrumental neutron activation analysis. *Can. J. Fish. Aquat. Sci.* 47:1593-1603.

Mount, D.R., J.R. Hockett, and W.A. Gern. 1988. The effect of long-term exposure to acid, aluminum, and low calcium on adult trout (*Salvelinus fontinalis*). 2. Vitellogenesis and osmoregulation. *Can. J. Fish. Aquat. Sci.* 45:1633-1642.

Mount, D.R., C.G. Ingersoll, D.D. Gulley, J.D. Fernandez, T.W. LaPoint, and H.L. Bergman. 1988. The effect of long-term exposure to acid, aluminum, and low calcium on adult brook trout (*Salvelinus fontinalis*). 1. Survival, growth, fecundity, and progeny survival. *Can. J. Fish. Aquat. Sci.* 45:1623-1632.

Wood, C.M., B.P. Simons, D.R. Mount, and H.L. Bergman. 1988. Physiological evidence of acclimation to acid/aluminum stress in adult brook trout (*Salvelinus fontinalis*). 2. Blood parameters by chronic cannulation studies under challenge conditions. *Can. J. Fish. Aquat. Sci.* 45:1579-1605.

Peer-Reviewed Book Chapters/Symposium Proceedings

Gulley, D.D., D.R. Mount, J.R. Hockett, and H.L. Bergman. 1993. A statistical model to predict toxicity of saline produced waters to freshwater organisms. In: *Produced Water--Technological/Environmental Issues and Solutions*. Ray, J.P. and F.R. Engelhart (eds.), Plenum Publishing Corporation, New York, NY. pp. 89-96.

Mount, D.R., K.R. Drott, D.D. Gulley, J.P. Fillo, and P.E. O'Neill. 1993. Use of laboratory toxicity data for evaluating the environmental acceptability of produced water discharge to surface waters. In: *Produced Water--Technological/Environmental Issues and Solutions*. Ray, J.P. and F.R. Engelhart (eds.), Plenum Publishing Corporation, New York, NY. pp. 175-185.

INVITED PRESENTATIONS

Mount, D.R. 1994. Assessment of metal toxicity in the aquatic environment. Department of Interior Hazardous Materials Management Conference, Phoenix, AR, May 17-19.

Mount, D.R., D.D. Gulley, and J.M. Evans. 1993. Predicting toxicity caused by major ions in produced waters and other high TDS waters. Society of Environmental Toxicology and Chemistry, 14th Annual Meeting, Houston, TX, November 14-18.

Mount, D.R., W. Quast, and D. Dolman. 1993. Assessing toxicity of varying major ion concentrations to marine organisms. Society of Environmental Toxicology and Chemistry, 14th Annual Meeting, Houston, TX, November 14-18.

Mount, D.R. and J.R. Hockett. 1992. Biomonitoring and toxicity identification/reduction evaluations: Laboratory issues. Texas Water Pollution Control Association Annual Conference, Dallas, TX, June 3-5.

Mount, D.R. 1991. Case studies of industrial toxicity identification evaluations. Society of Environmental Toxicology and Chemistry, 12th Annual Meeting, Seattle, WA, October 31-November 4.

Mount, D.R. 1990. Implications of water quality-based permitting. Atlantic Richfield Company, Environmental Health and Safety Seminar, Phoenix, AR, June 6-7.

Mount, D.R. 1990. The toxicity-based approach to pollutant identification. 13th Annual EPA Conference on Analysis of Pollutants in the Environment, Norfolk, VA, May 9-10.

Mount, D.R. 1990. Toxicity identification and reduction. Wyoming Department of Environmental Quality, Effluent Toxicity/Radium 226 Workshop, Casper, WY, April 25.

Mount, D.R. 1990. Toxicological perspectives associated with toxicity identification/reduction evaluations. American Institute of Chemical Engineers, Orlando, FL, March 18-22.

Mount, D.R. 1990. Case examples of toxicity identification evaluations. New England Water Pollution Control Association, Boston, MA, February 5-7.

Mount, D.R. 1989. Results and conclusions of the Lake Acidification and Fisheries Project: Toxicology. EPRI briefing to the U.S. EPA National Acid Precipitation Assessment Project, Arlington, VA, December 14.

Mount, D.R. 1989. Implications of biomonitoring for municipal dischargers. Rocky Mountain Water Pollution Control Association Wastewater Operations Seminar, Fort Morgan, CO, October 20.

Mount, D.R. 1989. Living with biomonitoring. Rocky Mountain AWWA/WPCA April luncheon, Denver, CO, April 11.

Mount, D.R. 1989. Implications of biological monitoring for the mining industry. American Institute of Mining Engineers/Colorado Mining Association Short Course: "Mining Waste--Perspective, Strategy, and Solutions," Denver, CO, February 7.

Mount, D.R. 1988. History and experiences in toxics monitoring. Rocky Mountain Water Pollution Control Federation, Pre-Conference Workshop, September 11.

Mount, D.R. 1988. Using laboratory bioassays to predict fish population responses to acidification. North American Lake Management Society, Rocky Mountain Region, Annual Meeting, Denver, CO, June 9.

Mount, D.R. 1988. Physiological and toxicological effects of acidification on brook and rainbow trout. U.S. EPA Environmental Research Laboratory, Gulf Breeze, FL, May 3.

ORAL PRESENTATIONS

Mount, D.R., S.A. Diamond, and R.J. Erickson. 2001. Linking exposure and dosimetry to risk from photo-activated toxicity of PAHs. 22nd Annual SETAC Meeting, Baltimore, MD, November 11-15, 2001.

Leonard, E.N., D.R. Mount, and G.T. Ankley. 2001. Modification of metal partitioning by supplementing acid volatile sulfide in freshwater sediments. Midwest Regional SETAC Meeting, Racine, WI, April 26-27, 2001.

Heinis, L.J., D.R. Mount, V.R. Mattson, and S.A. Diamond. 2001. Sediment toxicity evaluation of extracts of organic chemicals from contaminated sediments: Evaluation of an experimental approach. Midwest Regional SETAC Meeting, Racine, WI, April 26-27, 2001.

Sibley, P.K., G.T. Ankley, and D.R. Mount. 1997. Comparative sensitivity of several aquatic invertebrates to UV-light following exposure to fluoranthene-spiked sediment. SETAC 18th Annual Meeting, San Francisco, CA, November 16-20.

Norberg-King, T.J., D.R. Mount, P.K. Sibley, D.A. Benoit, C.G. Ingersoll, N. Kemble, J. Dwyer, G. Burton, C. Rowland, and T. Hall. 1997. Development of life-cycle methods for freshwater sediments: Interlaboratory evaluation of sediment tests. SETAC 18th Annual Meeting, San Francisco, CA, November 16-20.

Mount, D.R., G.T. Ankley, R.J. Erickson, P.K. Sibley, L.P. Burkhard, and P.M. Cook. 1997. Development of toxicological models to assess the ecological risk from photoactivated toxicity of PAHs. SETAC 18th Annual Meeting, San Francisco, CA, November 16-20.

Ho, R., R. Burgess, A. Kuhn, M. Pelletier, M. Cantwell, D.R. Mount, E.N. Leonard, T.J. Norberg-King, C.W. West, M. Lukasewycz, G.T. Ankley, J. Besser, J. Ingersoll, J. Huckins, Lebor, and J. Petty. 1997. Development of whole sediment toxicity identification methods. SETAC 18th Annual Meeting, San Francisco, CA, November 16-20.

Diamond, S.A., L.P. Burkhard, D.R. Mount, and G.T. Ankley. 1997. Fluorescence spectra as predictors of PAH phototoxicity. SETAC 18th Annual Meeting, San Francisco, CA, November 16-20.

Kemble, J., J. Dwyer, C.G. Ingersoll, A. Burton, C. Rowland, D.R. Mount, T.J. Norberg-King, and P.K. Sibley. 1997. Round-robin testing of a proposed standard method for assessing sublethal effects of sediment contamination on the amphipod *Hyalella azteca*. SETAC 18th Annual Meeting, San Francisco CA, November 16-20.

Sibley, P.K., D.A. Benoit, T.J. Norberg-King, D.R. Mount, G. Burton, N. Kemble, C. Rowland, C.G. Ingersoll, Dwyer, and T. Hall. 1997. Round-robin testing of a proposed standard method for assessing sub-lethal effects of sediment contamination on the midge, *Chironomus tentans*. SETAC 18th Annual Meeting, San Francisco, CA, November 16-20.

West, C.W., P.A. Kosian, E.A. Makynen, M.S. Pasha, P.K. Sibley, D.R. Mount, and G. T. Ankley. 1997. Treatment of PAH contaminated sediments with a carbonaceous absorbent. SETAC 18th Annual Meeting, San Francisco, CA, November 16-20.

Mount, D.R. and W.J. Berry. 1997. The use of equilibrium partitioning in the derivation of sediment quality criteria and guidelines. SETAC 18th Annual Meeting, San Francisco, CA, November 16-20.

Hockett, J.R. and D.R. Mount. 1997. Use of TIE methods to characterize and identify nitrite toxicity - A case example. SETAC 18th Annual Meeting, San Francisco, CA, November 16-20.

FIRST AUTHOR ABSTRACTS

Mount, D.R. and G.T. Ankley. 1996. Evaluating hazards of PAH-contaminated sediments to aquatic organisms. 11th Annual Conference of Contaminated Soils, Amherst, MA, October 21-24.

Mount, D.R., G.T. Ankley, C.W. West, P.A. Kosian, and E. Makynen. 1996. Use of non-polar resin for *in situ* control of organic contaminant bioavailability in sediments. Society of Environmental Toxicology and Chemistry, 17th Annual Meeting, Washington, DC, November 17-21.

Mount, D.R., G.T. Ankley, J.M. Besser, E.L. Leonard, T.J. Norberg-King, and C.W. West. 1996. Development of toxicity identification procedures for whole sediment toxicity tests. Midwest Chapter of the Society of Environmental Toxicology and Chemistry, 2nd Annual Meeting, Duluth, MN, March 3-4.

Mount, D.R., C.E. Henke, C.G. Ingersoll, J.M. Besser, G.T. Ankley, T.J. Norberg-King, and C.W. West. 1995. Development of toxicity identification procedures for whole sediment toxicity tests. Society of Environmental Toxicology and Chemistry, 16th Annual Meeting/2nd World Congress, Vancouver, British Columbia, Canada, November 5-9.

Mount, D.R., A.B. Eye, and J.R. Hockett. 1993. Response of rainbow trout fry to heavy metal exposure through the diet. Society of Environmental Toxicology and Chemistry, 14th Annual Meeting, Houston, TX, November 14-18.

Mount, D.R., D.D. Gulley, and J.M. Evans. 1993. Salinity/toxicity relationships to predict the acute toxicity of produced waters to freshwater organisms. 1st Society of Petroleum Engineers/U.S. Environmental Protection Agency Joint Exploration and Production Environmental Conference, San Antonio, TX, March 7-10.

Mount, D.R., K.R. Drott, D.D. Gulley, J.P. Fillo, and P.E. O'Neill. 1992. Use of laboratory toxicity data for evaluating the environmental acceptability of produced water discharge to surface waters. 1992 International Produced Water Symposium, San Diego, CA, February 4-6.

Mount, D.R. and J.R. Hockett. 1992. Summary findings from toxicity identification evaluations. Society of Environmental Toxicology and Chemistry, 13th Annual Meeting, Cincinnati, OH, November 8-12.

Mount, D.R. and J.R. Hockett. 1991. Use of toxicity identification evaluation methods to characterize, identify, and confirm hexavalent chromium toxicity. Society of Environmental Toxicology and Chemistry, Rocky Mountain Chapter, 4th Annual Meeting, Fort Collins, CO, July 12-13.

Mount, D.R., J.R. Hockett, and D.I. Mount. 1991. A simple method of pH control for use in static and static-renewal toxicity tests. Society of Environmental Toxicology and Chemistry, Rocky Mountain Chapter, 4th Annual Meeting, Fort Collins, CO, July 12-13.

Mount, D.R. 1990. Effluent toxicity: Why measure toxicity? Industrial Wastewater Management Workshop, San Juan, Puerto Rico, October 18-19.

Mount, D.R. 1990. Identifying sources of effluent toxicity: Toxicity reduction evaluations. Industrial Wastewater Management Workshop, San Juan, Puerto Rico, October 18-19.

Mount, D.R. and J.R. Hockett. 1990. Case examples of Toxicity Identification Evaluations. Society of Environmental Toxicology and Chemistry, 11th Annual Meeting, Arlington, VA, November 11-15.

Mount, D.R. and J.R. Hockett. 1990. Case examples of toxicity identification evaluations. Society of Environmental Toxicology and Chemistry, Rocky Mountain Chapter, 3rd Annual Meeting, Fort Collins, CO, March 6-7.

Mount, D.R., H.L. Bergman, D.D. Gulley, and J.R. Hockett. 1987. Responses of four fish species to combinations of acid, aluminum and calcium. Society of Environmental Toxicology and Chemistry, 8th Annual Meeting, Pensacola, FL, November 8-11.

Mount, D.R., W.A. Gern, J.R. Hockett, and H.L. Bergman. 1986. The effect of long-term exposure to acidified, low-conductivity waters on the reproductive and ionoregulatory physiology of brook and rainbow trout. Society of Environmental Toxicology and Chemistry, 7th Annual Meeting, Washington, DC, November 2-5.

Mount, D.R. and W.A. Gern. 1985. Plasma estradiol, vitellogenin and calcium cycles in brook trout during long-term exposure to acidified, low-conductivity waters. Society of Environmental Toxicology and Chemistry, 6th Annual Meeting, St. Louis, MO, November 10-13.

Mount, D.R. and W.A. Gern. 1985. Plasma estradiol, vitellogenin and calcium cycles in brook trout (*Salvelinus fontinalis*) during long-term exposure to acidified, low conductivity waters. International Symposium on Acidic Precipitation, Muskoka, Ontario, Canada, September 15-20.

OTHER

Academic/Teaching

Instructor, Using Toxicity Identification Evaluations at Oil Refineries. University of Wisconsin-Madison, Department of Engineering and Professional Development, May 24-25, 1994.

Guest Lecturer, Ecotoxicology, FW331. University of Missouri, Columbia, Missouri, April 26, 1994.

Instructor, Using Toxicity Identification Evaluations. University of Wisconsin-Madison, Department of Engineering and Professional Development, May 15-16, 1991, Madison, WI; March 2-3, 1992, Orlando, FL; April 30-May 1, 1992, Berkeley, CA; May 23-24, 1994, Madison, WI.

Graduate Committee, Russ Pickering. Colorado State University, Department of Fisheries and Wildlife, 1993.

Affiliate Professor, Department of Fisheries and Wildlife. Colorado State University, Fort Collins, Colorado, 1990 - 1993.

Instructor, Water Quality for Fisheries and Wildlife, FW420. Department of Fisheries and Wildlife Biology, Colorado State University, Fort Collins, Colorado, Spring 1990.

Instructor, Bioassay Toxicity Testing Workshop. University of Wisconsin-Milwaukee, Department of Engineering and Professional Development, April 8-9, 1990.

Graduate Teaching Assistant/Laboratory Instructor, Human Anatomy and Physiology. University of Wyoming, Laramie, Wyoming, 1984.

Undergraduate Teaching Assistant, Microbiology and Animal Physiology. St. Olaf College, Northfield, Minnesota, 1982-1983.

Invited Participation

U.S. EPA Workshop on the Use of Biological Mechanisms in Ecotoxicity Testing Decisions. San Diego, California, March 10-12, 1987.

U.S. EPA Workshop on Mesocosm Protocols. Duluth, Minnesota, September 14-17, 1987.

U.S. Environmental Protection Agency Complex Effluent Program Review. Duluth, Minnesota, September 12-14, 1990.

Technical Advisory Group, Marine Ion Toxicity Research Program, Gas Research Institute/ENSR Consulting and Engineering, 1993 - 1995.

American Petroleum Institute Workshop to Identify Promising Technologies for the Treatment of Produced Water Toxicity. Houston, Texas, October 11-12, 1994.

Ecological Effects of Endocrine Disrupters Workshop. Duluth, Minnesota, June 13-15, 1995.

U.S. Army Corps of Engineers/U.S. EPA Workshop on Interpreting the Consequences of Bioaccumulation from Dredged Sediments. Denver, Colorado, August 29-31, 1995.